

## SAFETY DATA SHEET – SS71 BONDING TAPE

### 1.0 Identification

<b>Product Name:</b>	EXF-936
<b>Additional Identification – Chemical Name:</b>	Polyurethane polymer
<b>Applications, recommendations and restrictions on use:</b>	Heat activated adhesive film for manufacturing and research use only
<b>Supplier:</b>	Miller Weldmaster Corp 4220 Alabama Ave Navarre, OH 44662

**For product information and assistance: 330-833-6739**

### 2.0 Hazards Identification

<b>Hazard Classification:</b>	Not classified
<b>Label Elements:</b>	
• <b>Hazard Symbol:</b>	No symbol
• <b>Signal Word:</b>	No signal word
• <b>Hazard Statement:</b>	Not applicable
<b>Precautionary Statement:</b>	Not applicable
<b>Other hazards which do not result in GHS classification:</b>	None identified

### 3.0 Composition/Information on ingredients

Chemical Name	CAS No	Weight-%
Substituted Triazole	Confidential	<0.8%
Sebacic Acid Derivative	Confidential	<0.8%

#### Trade Secret Information:

A specific chemical identity or percentage of composition has been withheld as a trade secret.

#### General Information

The components are not hazardous or are below required disclosure limits.

#### 4.0 First Aid Measures

<b>Ingestion:</b>	Treat symptomatically. Get medical attention.
<b>Inhalation:</b>	Remove exposed person to fresh air if adverse effects are observed.
<b>Skin Contact:</b>	Wash with soap and water. If skin irritation occurs, get medical attention. For contact with molten product, do not remove contaminated clothing. If possible, submerge area with cold water. Pack with ice. DO NOT attempt to peel polymer from skin. Seek medical attention immediately.
<b>Eye Contact:</b>	Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If hot melted material should splash into the eyes, flush eyes immediately with water for 15 minutes while holding the eyelids open. Immediately call a poison center or doctor.
<b>Personal Protection for First Aid Responders:</b>	When providing first aid always protect yourself against exposure to chemicals or blood born diseases by wearing gloves, masks and eye protection. After providing first aid, wash your exposed skin with soap and water.
<b>Most important symptoms/effects, acute and delayed</b>	
<b>Symptoms:</b>	See section 11.
<b>Indication of immediate medical attention and special treatment needed</b>	
<b>Treatment:</b>	Treat symptomatically

#### 5.0 Fire-fighting Measures

<b>General fire hazards:</b>	No unusual fire or explosion hazards noted
<b>Suitable (and unsuitable) extinguishing media</b>	
<b>Suitable extinguishing media:</b>	Use water spray, dry chemical or foam for extinction. CO2 may be ineffective on large fires.
<b>Unsuitable extinguishing media:</b>	Not determined
<b>Specific hazards arising from the chemical:</b>	See section 10 for additional information.
<b>Special protective equipment and precautions for firefighters</b>	
<b>Special fire fighting procedures:</b>	Thermoplastic polymers can burn. Protect product from flames; maintain proper clearance when using heat devices, etc. Irritating or toxic substances will be emitted upon burning, combustion or decomposition. Large masses of molten polymer held at elevated temperatures for extended periods of time may auto-ignite.

<b>Special protective equipment for fire-fighters:</b>	Wear full protective fire gear including self-containing breathing apparatus operated in the positive pressure mode with full face piece, coat, pants, gloves and boots
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## 6.0 Accidental Release Measures

<b>Personal precautions, protective equipment and emergency procedures:</b>	Personal protective equipment must be worn, see Personal Protection Section for PPE recommendations
<b>Methods and material for containment and cleanup:</b>	Pick up free solid for recycle and/or disposal
<b>Environmental precautions:</b>	Avoid release to the environment. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages. Prevent further spillage if safe to do so

## 7.0 Handling and Storage: Precautions for safe handling:

- Avoid prolonged or repeated contact with skin. Contact with heated material may cause thermal burns. Wash thoroughly after handling.
- Refer to processing recommendations and / or contact your local Technical Service representative for heat process temperature range. For most thermoplastic urethane films, heat activation process is normally in the 150 - 230°C (300 - 450°F) range, however some products may require different temperatures. Heating above the maximum handling temperature can generate hazardous decomposition products (See Section 10). Review the temperature data list in "Maximum Handling Temperature" in this section for maximum recommended temperature.
- Fume condensates may include hazardous contaminants from additives. Condensate may be combustible and should be periodically removed from exhaust hoods, ductwork, and other surfaces. Impervious gloves should be worn during cleanup operations to prevent skin contact.
- Post thermal-processing activities necessary to produce shaped articles (such as cutting, abrasion, drilling, etc.) may create dust or polymer particulates. Dust or particulates may pose a dust explosion hazard. Avoid breathing dust.
- Loading and unloading operations may cause nuisance dust to form. Electrostatic buildup may occur when transferring this product from its container. The spark produced may be sufficient to ignite vapors of flammable liquids. Always transfer product by means, which avoid static buildup. Avoid transferring product directly from its container near or into combustible or flammable solvent.

- Conduct any operations emitting fumes or vapors (including thermoforming, heat joining, cutting and / or sealing of articles and clean up) under well-ventilated conditions. Avoid breathing process vapors. Do not hold product for extended periods of time at elevated temperatures or allow masses of hot polymer to accumulate because they can decompose emitting hazardous gasses. Do not taste, swallow or chew products. Wash thoroughly after processing. Do not store or consume food in processing areas. The major off-gasses from normal heat processing are expected to be water vapor and carbon dioxide. Other trace volatile organic components may also be emitted.
- Do not steam sterilize articles made with thermoplastic polyurethanes. Methylene dianiline can be generated as a result. Observe good industrial hygiene practices. Provide adequate ventilation. Wear appropriate personal protective equipment.

### 7.1 Handling and Storage continued...

<b>Maximum Handling Temperature:</b>	232°C 450°F
<b>Conditions for safe storage, including any incompatibilities:</b>	Store away from incompatible materials. See Section 10 for incompatible materials. Store in dry, well ventilated place away from sources of heat and direct sunlight.
<b>Maximum Storage Temperature:</b>	Not Determined

### 8.0 Exposure controls/personal protection

<b>Control Parameters</b>	
<b>Occupational Exposure Limits:</b>	None of the components have assigned exposure limits.
<b>Appropriate Engineering controls:</b>	Provide adequate ventilation. Thermal processing operations should be ventilated to control gases and fumes given off during processing. No special requirements under ordinary conditions of use and with adequate ventilation.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>General Information:</b>	Use personal protective equipment as required.
<b>Eye/face Protection:</b>	If contact is likely, safety glasses with side shields

	are recommended.
<b>Skin/Hand Protection:</b>	To avoid burns from contact with molten product, use thermal insulating gloves. The glove supplier can recommend suitable gloves.
<b>Respiratory Protection:</b>	Consult with an industrial hygienist to determine to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator. Under normal use conditions, a respirator is not usually required. Use appropriate respiratory protection if exposure to dust particles, mist or vapors is likely. Cutting operations may create small particles from this product. If inhalation of particles cannot be avoided, wear a dust respirator.
<b>Hygiene Measures:</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and / or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

## 9.0 Physical and Chemical Properties

<b>Appearance</b>	
<b>Physical State:</b>	Solid (Film)
<b>Color:</b>	Natural
<b>Odor:</b>	Faint
<b>Odor Threshold:</b>	No data available
<b>pH:</b>	No data available
<b>Melting Point:</b>	No data available
<b>Boiling Point:</b>	No data available

<b>Flash Point:</b>	Not applicable
<b>Evaporation Rate:</b>	No data available
<b>Flammability (solid, gas):</b>	No data available
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Flammability Limit – Upper (%)</b>	No data available
<b>Flammability Limit – Lower (%)</b>	No data available
<b>Explosive Limit – Upper (%)</b>	No data available
<b>Explosive Limit – Lower (%)</b>	No data available
<b>Vapor Pressure:</b>	No data available
<b>Vapor Density:</b>	No data available
<b>Relative Density:</b>	1.2 68°F (20°C)
<b>Solubility</b>	
<b>Solubility in water:</b>	Insoluble in water
<b>Solubility (other):</b>	No data available
<b>Partition coefficient (n-octanol/water):</b>	No data available
<b>Auto-ignition temperature:</b>	No data available
<b>Decomposition temperature:</b>	No data available
<b>Viscosity:</b>	No data available

## 10.0 Stability and Reactivity

<b>Reactivity:</b>	No data available
<b>Chemical Stability:</b>	Material is stable under normal conditions.
<b>Possibility of Hazardous Reactions:</b>	Will not occur.
<b>Conditions to avoid:</b>	Not Determined
<b>Incompatible Materials:</b>	Strong acids. Oxidizing agents.

<b>Hazardous Decomposition Products</b>	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors. May also include isocyanates and small amounts of nitrogen oxides or hydrogen cyanide.
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## 11.0 Toxicological Information

<b>Information on likely routes of exposure</b>	
<b>Inhalation:</b>	No data available
<b>Ingestion:</b>	No data available
<b>Skin Contact:</b>	No data available
<b>Eye Contact:</b>	No data available
<b>Information on toxicological effects</b>	
<b>Acute toxicity Oral Product:</b>	Not classified for acute toxicity based on available data.
<b>Dermal Product:</b>	Not classified for acute toxicity based on available data.
<b>Inhalation Product:</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and / or flu-like symptoms. Persons with sensitive airways (e.g. asthmatics) may react to vapors. Not classified for acute toxicity based on available data.
<b>Skin Corrosion/Irritation Product:</b>	Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Contact with heated polymer may cause thermal burns and adhesion of solidified product to the skin. Remarks: Not classified as a primary skin irritant.

### 11.1 Toxicological Information continued...

<b>Serious Eye Damage/Eye Irritation Product:</b>	Remarks: Not classified as a primary eye irritant.
<b>Respiratory sensitization Product:</b>	Remarks: Under decomposition

	conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and / or respiratory sensitization.
<b>Skin sensitization Product:</b>	Remarks: Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and / or respiratory sensitization.
<b>Specific Target Organ Toxicity – Single Exposure:</b>	No data available
<b>Aspiration Hazard:</b>	No data available
<b>Other Effects: Polyurethane Polymer</b>	Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and / or respiratory sensitization. Persons with sensitive airways (e.g. asthmatics) may react to vapors.
<b>Chronic Effects</b>	
<b>Carcinogenicity:</b>	No data available
<b>IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:</b>	No carcinogenic components identified.
<b>U.S. National Toxicology Program (NTP) Report on Carcinogens:</b>	No carcinogenic components identified.
<b>U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):</b>	No carcinogenic components identified.
<b>Germ Cell Mutagenicity:</b>	No data available
<b>Reproductive Toxicity:</b>	No data available
<b>Specific Target Organ Toxicity – Single Exposure:</b>	No data available



## 12.0 Ecological Information

<b>Exotoxicity:</b>	No data is available on the product itself. Toxicity is expected to be low based on insolubility in water.
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## 13.0 Disposal Considerations

<b>Disposal Instruction:</b>	Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Dispose of packaging or containers in accordance with local, regional, national and international regulations.
<b>Contaminated Packaging:</b>	Container packaging may exhibit hazards.

## 14.0 Transport Information

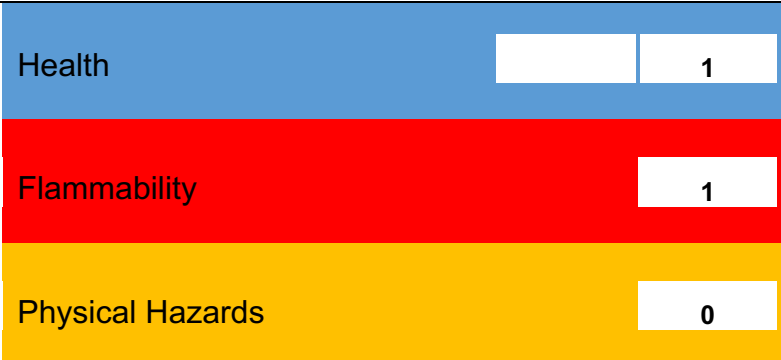
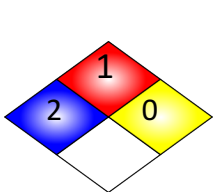

<b>DOT:</b>	Not Regulated
<b>IMDG:</b>	Not Regulated
<b>IATA:</b>	Not Regulated
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	None Known
<p><b>Shipping descriptions may vary based on mode of transport, quantities, temperature of the material, package size and / or origin and destination. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material. Review classification requirements before shipping materials at elevated temperatures.</b></p>	

## 15.0 Regulatory Information

<b>US Federal Regulations:</b>	
<b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) Federal Regulations:</b>	None present or none present in regulated quantities.
<b>CERCLA Hazardous Substance List (40 CFR 302.4):</b>	None present or none present in regulated quantities.
<b>Superfund Amendments and Reauthorization Act of 1986 (SARA): Hazard categories:</b>	None known
<b>SARA 302 Extremely Hazardous Substance</b>	
<b>SARA 304 Emergency Release Notification</b>	
<b>SARA 311/312 Hazardous Chemical</b>	
<b>SARA 313 (TRI Reporting)</b>	This product may contain chemical(s) regulated under the Superfund Amendments and Reauthorization Act (SARA). For additional information, please contact Adhesive Films (MSDS@adhesivefilms.com).
<b>US State Regulations</b>	
<b>US California Proposition 65:</b>	No ingredient regulated by CA Prop 65 present.
<b>Inventory Status:</b>	
<b>Australia (AICS):</b>	See section 10 for additional information.
<b>Canada (DSL/NDSL):</b>	All components are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List.
<b>China (IECSC):</b>	All components of this product are listed on the Inventory of Existing Chemical Substances in China.
<b>European Union (REACH):</b>	To obtain information on the REACH compliance status of this product, please contact us at MSDS@adhesivefilms.com.
<b>Japan (ENCS):</b>	All components are in compliance with the Chemical Substances Control Law of Japan.
<b>Korea (ECL):</b>	This product requires notification before sale in Korea.
<b>New Zealand (NZIoC):</b>	All components are in compliance with chemical

	notification requirements in New Zealand.
<b>Philippines (PICCS):</b>	All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A.6969)
<b>Switzerland (SWISS):</b>	All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.
<b>Taiwan (TCSCA):</b>	All components of this product are listed on the Taiwan inventory.
<b>United States (TSCA):</b>	All components of this material are on the US TSCA Inventory.

## 16.0 Other Information, including date of preparation or last revision

<b>HMIS Hazard ID</b>	 <p>Hazard rating: 0-Minimal; 1-Slight; 2-Moderate; 3-Serious; 4-Serve; RNP-Rating not possible; *Chronic health effect.</p>
<b>NFPA Hazard ID:</b>	  <p>Hazard rating: 0-Minimal; 1-Slight; 2-Moderate; 3-Serious; 4-Servere; RNP-Rating not possible</p>
<b>Issue Date:</b>	6/29/16
<b>Version #:</b>	1.00
<b>Source of Information</b>	Raw material supplier for chemical data, internal company data and other publically available resources.
<b>Further Information:</b>	Contact supplier (see Section 1).

**Disclaimer**

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.